



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|----------------------|---------------------|------------------|
| 09/919,873 | 08/02/2001 | Hideo Namiki | 071671-0158 | 4172 |
| 22428 | 7590 | 06/27/2007 | EXAMINER | |
| FOLEY AND LARDNER LLP | | | MEW, KEVIN D | |
| SUITE 500 | | | ART UNIT | PAPER NUMBER |
| 3000 K STREET NW | | | 2616 | |
| WASHINGTON, DC 20007 | | | MAIL DATE | DELIVERY MODE |
| | | | 06/27/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/919,873 | NAMIKI, HIDEO |
| | Examiner | Art Unit |
| | Kevin Mew | 2616 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 March 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 7-10, 16 and 19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 7, 10, 16 and 19 is/are rejected.
 7) Claim(s) 8-9 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed 3/28/2007 have been considered. Claims 1-6, 11-15, 17-18 have been canceled and claim 19 has been newly added by applicant. Claims 7-10, 16, 19 are currently pending.

Claim Objections

2. Claim 7 is objected to because of the following informalities:

In claim 7, lines 17-19, the symbol "n" in "plurality of times (n x t)" is not clearly defined.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan et al. (USP 6,658,250) in view of Katinakis et al. (USP 6,389,039), and in further view of Baik (USP 5,790,592).

Regarding claim 7, Ganesan discloses a synchronous data transmission system comprising a first terminal and a second terminal (first and second fixed subscriber units 20, Fig.

2) and a transmission line connected between the first and second terminals for voice or image communication with each other (first and second fixed subscriber units 20 in voice communications with each other, Fig. 2), each terminal (mobile terminal comprising elements 21, 22, Fig. 3) including a voice or image input means (Receiver RF 31, Fig. 3), a sampling clock generator, and A/D converter for digitalizing the output of the voice input means (A/D converter 32, Fig. 3), a data generator (channel decoder 35, Fig. 3), operable with the output of the sampling clock generator (ASIC for generating synchronization for outgoing signal, col. 7, lines 21-29), for generating data on the basis of the output of the A/D converter (generating demodulated waveform, col. 5, lines 56-67), a transmission buffer receiving the generated data (receive buffer 56 for receiving the channel decoded data, col. 5, lines 66-67), a plurality of reception buffer stages (transmit buffer 45, Fig. 3) supplied with the received data (supplied with data received over data bus 26, Fig. 3) via a transmission line, a data reproducer (channel encoder 44, Fig. 3) operable with the output of the sampling clock generator (ASIC for generating synchronization for incoming signal, col. 7, lines 21-29), for reproducing data from the plurality of reception buffer stages (for reproducing channel encoded data from the transmit buffer 45, Fig. 3), a D/A converter for converting the reproduced data to an analog signal (D/A converter 41 for converting digital data into analog signal, Fig. 3), a voice or image output means for outputting voice (Transmit RF section 40, Fig. 3) based on the D/A converter output (based on D/A converter 41 output, Fig. 3), the data received from the transmission line (data bus) being stored via the transmission line interface (line interface 8, Fig. 3) in the plurality of reception buffer stages (data received from the data bus being stored via the interface 8 in the transmit buffer where the data stored is stored in a plurality of time slots, col. 7, lines 65-67, col.

Art Unit: 2616

8, lines 1-12, Figs. 3 and 6; one time slot corresponds to one stage), the data stored in the plurality of reception buffer stages being transmitted to the data reproducer (the data stored in the transmit buffer 45, where data are stored in a plurality of time slots, are being transmitted to the channel encoder 44, col. 7, lines 65-67, col. 8, lines 1-12, Figs. 3 and 6; one time slot corresponds to one stage).

Ganesan does not explicitly show whether the data bus/transmission line is asynchronous.

However, Katinakis discloses a data bus that exchanges data packet transmission asynchronously between a base station and a mobile station (col. 1, lines 64-67, col. 2, lines 1-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixed subscriber unit 20 of Ganesan with the teaching of Katinakis in supporting both asynchronous data transmission such that the subscriber unit 20 of Ganesan will exchange data packet with the radio port control unit RPC as asynchronous transmission.

The motivation to do so is to avoid using dedicated connections for data transmissions, which decreases the load on the network by making more efficient usage of network resources.

Ganesan and Katinakis do not explicitly show the data stored in the transmission buffer having been packeted in certain time units (t) and being outputted via asynchronous transmission line interface to the asynchronous transmission line for the time unit (t), the reception buffer being capable of storing data received from the asynchronous

Art Unit: 2616

transmission line for a plurality of times (nxt) in every unit time (t), and the data reproducer reproducing data when data for the plurality of times (nxt) has been stored.

However, Baik discloses a first buffer in a CDMA terminal in which the transmitting data are stored in the first buffer at one time period during the channel-encoding operation, and the receiving data are stored in the first buffer at another time period before the decoded data are stored at another time period in the second buffer during the channel decoding operation (col. 3, lines 42-61 and Fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixed subscriber unit 20 of Ganesan and Katinakis with the teaching of Baik such that the data stored in the transmission buffer having been packeted in certain time units (t) and being outputted via asynchronous transmission line interface to the asynchronous transmission line for the time unit (t), the reception buffer being capable of storing data received from the asynchronous transmission line for a plurality of times (nxt) in every unit time (t), and the data reproducer reproducing data when data for the plurality of times (nxt) has been stored.

The motivation to do so is to perform channel encoding and decoding operation within a predetermined time period of 20 msec.

Regarding claim 19, Ganesan, Katinakis and Baik disclose all the aspects of claim 7 above. Ganesan and Baik do not explicitly show the synchronous data transmission system according to claim 7, wherein the plurality of reception buffer stages are solely supplied with the

Art Unit: 2616

reception data from the asynchronous transmission line and do not receive any data from the synchronous transmission line.

However, Katinakis discloses a data bus that exchanges data packet transmission asynchronously between a base station and a mobile station (col. 1, lines 64-67, col. 2, lines 1-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixed subscriber unit 20 of Ganesan and Baik with the teaching of Katinakis in supporting both asynchronous data transmission such that the plurality of reception buffer stages are solely supplied with the reception data from the asynchronous transmission line and do not receive any data from the synchronous transmission line.

The motivation to do so is to avoid using dedicated connections for data transmissions, which decreases the load on the network by making more efficient usage of network resources.

4. Claims 10, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan et al. (USP 6,658,250) in view of Katinakis et al. (USP 6,389,039) and Baik (USP 5,790,592), and in further view of Monahan et al. (6,044,124).

Regarding claim 10, Ganesan, Katinakis and Baik disclose all the aspects of claim 7 above, except fails to disclose the synchronous data transmission system according to claim 7, wherein the sampling clock frequency of one terminal is made closer to the sampling clock frequency of another terminal by estimating the sampling clock on the basis of the data received directly from the asynchronous transmission line without having been processed in any manner by the one terminal.

Art Unit: 2616

However, Monahan discloses a radio receiver to synchronize its receiver clock frequency to the transmitting clock frequency (col. 2, lines 10-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixed subscriber unit 20 of Ganesan, Katinakis and Baik with the teaching of Monahan in allowing the receiver to synchronize the transmitter's clock frequency to the receiver's clock frequency such that the sampling clock frequency of one terminal is made closer to the sampling clock frequency of another terminal by estimating the sampling clock on the basis of the data received directly from the asynchronous transmission line without having been processed in any manner by the one terminal.

The motivation to do so is to avoid timing jitters and data loss.

Regarding claim 16, Ganesan, Katinakis, and Baik disclose all the aspects of claim 7 above, except fails to disclose the synchronous data transmission system according to claim 7, wherein the plurality of reception buffer stages are configured to handle both data underflow and data overflow, without loss of data, due to different sampling clock rates output by the respective sampling clock generator provided in the first and second terminals.

However, Monahan discloses configuring a radio receiver for preventing underflow and overflow due different sampling frequencies between the transmitter and the receiver (col. 2, lines 10-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixed subscriber unit 20 of Ganesan, Katinakis and Baik with the teaching of Monahan in configuring a radio receiver for preventing underflow and overflow

due different sampling frequencies between the transmitter and the receiver such that the plurality of reception buffer stages of Ganesan are configured to handle both data underflow and data overflow, without loss of data, due to different sampling clock rates output by the respective sampling clock generator provided in the first and second terminals.

The motivation to do so is to prevent underflow and overflow while maintaining a low jitter specification.

Allowable Subject Matter

5. Claims 8-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 8, the synchronous data transmission system according to claim 7, further comprising a sampling clock synchronizing means for synchronizing the sampling clocks of the sampling clock generators in the first and second terminals by inputting the output of the sampling clock generator in one terminal to the sampling clock generator in another terminal.

In claim 9, the synchronous data transmission system according to claim 7, wherein the frequency difference between the sampling clocks generated in the sampling clock generators in the first and second terminals is eliminated by inputting the clock from the sampling clock generator in one terminal to the sampling clock generator in another terminal.

Art Unit: 2616

Response to Arguments

6. Applicant's arguments filed on 3/28/2007 with respect to claims 7, 10, 16, 19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin Mew
Work Group 2616

KM



WELLINGTON CHIN
PRIMARY PATENT EXAMINER